



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,320	04/13/2004	Che-Hsiung Hsu	UC0422USNA	4493

23906 7590 10/11/2006

E I DU PONT DE NEMOURS AND COMPANY  
LEGAL PATENT RECORDS CENTER  
BARLEY MILL PLAZA 25/1128  
4417 LANCASTER PIKE  
WILMINGTON, DE 19805

EXAMINER

THOMAS, JAISON P

ART UNIT PAPER NUMBER

1751

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/823,320

Applicant(s)

HSU ET AL.

Examiner

Jaison P. Thomas

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 4/13/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-9, 12-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 8/2004.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species:

I: Polythiophene (in Claim 1)

II: Polypyrrole (in Claim 1)

III: Polyaniline (in Claim 1)

The species are independent or distinct because the prior art references that could be used to anticipate one of the species disclosed would not be used to anticipate the other species.

2. This application contains claims directed to the following patentably distinct species:

IV: Non-polymeric fluorinated sulfonic acids (in Claim 6)

V: Non-polymeric fluorinated phosphoric and phosphonic acids (in Claim 6)

VI: Non-polymeric fluorinated carboxylic acids (in Claim 6)

VII: Non-polymeric fluorinated acrylic acids (in Claim 6)

The species are independent or distinct because the prior art references that could be used to anticipate one of the species disclosed would not be used to anticipate the other species.

Art Unit: 1751

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently Claims 1,2,6,7,8,9,11,12,13-18 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

3. During a telephone conversation with John Lamming on 9/25/2006 a provisional election was made with traverse to prosecute the inventions of I and IV. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4 and 5 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

Art Unit: 1751

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 6-9, 12-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Han et al. (US Patent 5185100).

Han discloses a electrically conductive polymer which can be doped with one or more non-oxidizing acids (Abstract) wherein the polymer structure can have a structure given in Formula I (Column 3, lines 53-63) with X1 being S (Column 6, line 1) which examiner construes as polythiophene. A variety of non oxidizing protonic acids are disclosed in Columns 9-10 and examples include perfluorobenzene sulfonic acid, perfluoropenanoic acid, perfluoro benzoic acid (Column 10, lines 10-16) as well as other fluorinated non-polymeric acids (Column 9, lines 56-62). The composition can have a set of optional ingredients that are disclosed in Column 13, lines 47-60 including a variety of polymers including conductive polymers. Examples show tetrahydrofuran being used as one type of solvent for the conductive polymer and protonic acids (Example 10, Column 15, lines 54-56). The compositions that are made in this patent are used for a variety of applications which include EMI shielding, electrical connectors,

Art Unit: 1751

semiconducting photoconductor junctions, electrodes, capacitors and coatings (Column 13, lines 65-68 thru Column 14, lines 1-13).

With respect to the pH limitations of Claim 2 the examiner respectfully submits that the prior art inherently meets the claimed limitation. Specifically, the prior teaches the same compositions being made in a similar manner and would inherently possess pH values of Claim 2.

With respect to the devices containing a layer and buffer layer limitations of Claims 15 and 16, the examiner construes that the devices disclosed in the prior art inherently meets the claimed limitation. Specifically, the prior teaches the same compositions being made in a similar manner and would inherently possess said layers, including the buffering property, as required by Claims 15 and 16.

7. Claims 1-3, 6-9, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 62-119237.

The Japanese patent teaches a fluorine containing alkane sulphonic acid ion type dopant of the formula (I) which examiner construes as being highly fluorinated or perfluorinated depending on the selection of the X atom being fluorine. Dopants are used in conjunction with conducting polymers such polythiophene and the materials are used for the manufacture of various electrical devices such as switches, sensors, EMI material and antistatic material (Derwent Abstract).

With respect to the pH limitations of Claim 2 the examiner respectfully submits that the prior art inherently meets the claimed limitation. Specifically, the prior teaches

Art Unit: 1751

the same compositions being made in a similar manner and would inherently possess pH values of Claim 2.

With respect to the devices containing a layer and buffer layer limitations of Claims 15 and 16, the examiner construes that the devices disclosed in the prior art inherently meets the claimed limitation. Specifically, the prior teaches the same compositions being made in a similar manner and would inherently possess said layers, including the buffering property, as required by Claims 15 and 16.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. (US Patent 5185100).

Han et al. is relied upon as disclosed above. However, Han does not teach a layer configuration of the conductive polymer and organic acid as required by Claims 15 and 16 nor an electrode for thin film field effect transistor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to understand the device embodiments of the Han's composition would entail forming layers of the composition and further that such a composition could

Art Unit: 1751

be used for a transistor as Han discloses other semiconductor applications for the compositions as well as an application for being used as an electrode.

***Allowable Subject Matter***

10. Claims 10 and 11 are allowable over the prior art of record. The prior art does not teach, suggest or disclose a dispersion comprising a polythiophene and a non-polymeric fluorinated organic acid, particularly a fluoroether type acid, with the structure in Claim 10 or specific compounds disclosed in Claim 11.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

  
Mark Kopec  
Primary Examiner



Art Unit: 1751

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaison Thomas  
Examiner  
9/27/2006

JT